

## A REVIEW OF THE PHILIPPINE SPECIES OF THE *COROEBUS* GORY & LAPORTE GENUS-GROUP (COLEOPTERA, BUPRESTIDAE)

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The Philippine genera and species of the *Coroebus* generic group are reviewed. Five species of *Coroebus* are identified: *coelestis* Saunders, *spinosus* (Fabricius), *hastanus* Gory & Laporte, *albiventris* sp. n. and *bivestitus* sp. n. Five species of *Cisseicoraebus* are recognized: *grandis* (Kerremans), *pullatus* (Saunders) comb. n., *piperi* (Fisher) comb. n., *ciseoides* (Saunders) comb. n. and *bicoloratus* sp. n. *Philocoroebus* gen. nov., is described for *azureipennis* (Obenberger) comb. n., *banahaoensis* (Obenberger) comb. n., *meliboeiformis* (Saunders) comb. n., *cyaneoviridis* Fisher comb. n., and seven new species: *miquilensis* sp. n., *purpureus* sp. n., *samarensis* sp. n., *elongatus* sp. n., *alius* sp. n., *adamantinus* sp. n. and *pseudociseis* sp. n. The first Philippine species of *Cisseis*: *aquilonia* sp. n. and *Hypocisseis*: *philippinensis* sp. n., are described. The second Philippine species of *Vanroonia*: *luzonica* sp. n. is described. Keys are presented to separate the Philippine genera of the *Coroebus* group and the species of *Coroebus*, *Cisseicoraebus* and *Philocoroebus*.

Correspondence: Dr. C. L. Bellamy, 1651 S. Juniper Street 215, Escondido CA 92025, U. S. A.

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The eventual understanding of the genera and relationships within the large, virtually cosmopolitan tribe Coroebini is dependent upon the correct definition and species placement within or outside the type-genus *Coroebus* Gory & Laporte. The coroebine element of the Philippine Islands is particularly exciting due to its position biogeographically as the transition zone between the disparate faunas of southeast Asian, Malesian and Australasian regions.

Some of the taxa described herein were separated and apparently recognized as new by W. S. Fisher (Department of Entomology, USNM), but he never found the opportunity to realize his apparent intentions following the three main contributions to the Philippine buprestid fauna (Fisher 1921, 1922, 1926).

Label data are presented verbatim with commas inserted to separate data from individual lines and the "/" used to separate data from individual labels. Parenthetical information is added for clarity.

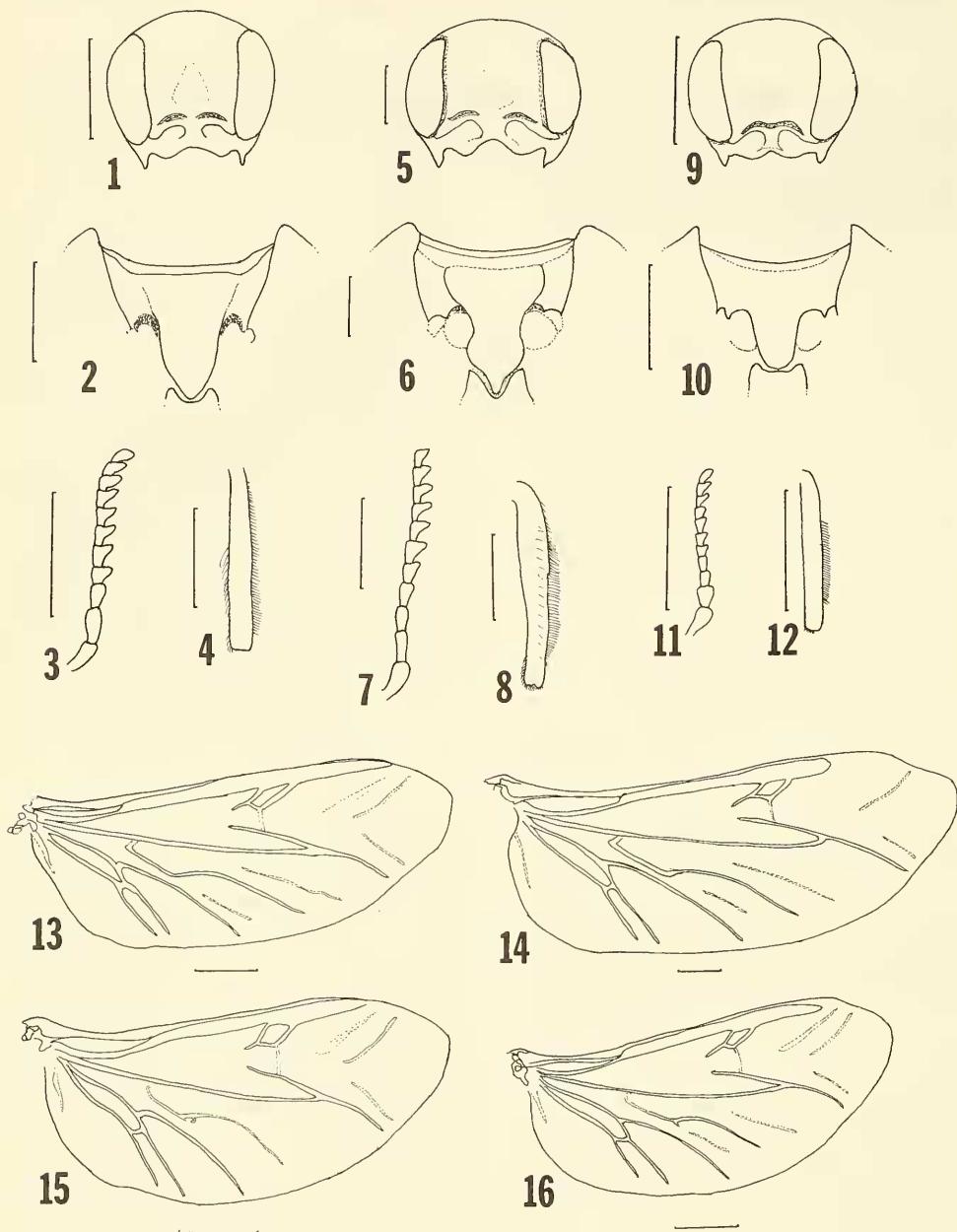
The following acronyms are used to indicate the various collections which house and/or loaned material for this study: BMNH, The Natural History

Museum, London, England; BPBM, B. P. Bishop Museum, Honolulu, Hawaii, U.S.A.; NMPC, National Museum, Prague, Czechoslovakia; NSMT, National Science Museum, Tokyo; USNM, National Museum of Natural History, Washington, D.C. and VCLP, Visayas State College of Agriculture, Leyte, Philippines.

A few morphometric abbreviations are used in the text as follows: L/W = total length versus width ratio, taken from greatest anterior extension of head to elytral apex; PN W/L = pronotal width versus length ratio; and PS L/W = prosternal length versus width ratio, both using maximum widths and lengths.

I was unable to make contact with or secure the loan of material from most of the Philippine collections and imagine that there is probably additional material awaiting study and description in the future.

It will eventually make sense and be necessary to comment on the phylogenetic relationships of the Philippine Coroebini. However, as there remain numerous undescribed coroebine taxa in the USNM



Figs. 1-16. Key figures for Philippine *Coroebus* generic group, head (frontal aspect), thoracic sternites (ventral aspect), antennae, metatibiae and hing wings. - 1-4, 13, *Coroebus bastanus*; 5-8, 14, *Cisseicoroebus grandis*; 9-12, 15, *Philocoroebus azureipennis*; 16, *P. alius* sp. n. (scale lines = 1 mm).

collections and probably others, e. g. several new species of *Brachycoroebus* Kerremans from Basilan and Mindanao and new species of both *Cryptodactylus* Deyrolle and *Neotoxoscelus* Fisher, it is certainly beyond both the scope and intent of this paper. This work has the sole purpose of defining and describing the taxa belonging to the *Coroebus* genus-group and as a starting point, I have emended the generic key recently presented in the first part of this series (Bellamy 1990).

#### KEY TO THE PHILIPPINE GENERA OF THE COROEBUS GROUP

1. Body generally elongate; pronotum without prelateral carinae; prosternum generally flattened, broadly excavated dorsad of procoxae ..... 2
- Body more or less ovoid or elongate ovoid; pronotum with (e.g. figs. 38, 39) or without prelateral carinae; prosternum generally more longitudinally convex and not so excavated 6
2. Mentonnieri absent, anterior margin of prosternum entire or feebly concave ..... 3
- Mentonnieri present, anterior margin of prosternum with either a single broad lobe or bilobed ..... 4
3. Prosternum with disc produced ventrally, more or less forming a 'V' shape, with anterior margin concave between two projected lateral angles; pygidium without median spine and not visible past elytral apices ..... *Coraebosoma* Obenberger
- Prosternum more or less entire, anterior margin evenly transverse; pygidium with single projecting medial tooth or spine visible between and past elytral apices (e.g. fig. 25) ..... *Coroebus* Gory & Laporte
4. Head and pronotum uneven, tuberculate ..... *Vanroonia* Obenberger
- Head and pronotum even, entire ..... 5
5. Elytra unicolorous; parts of pronotum, elytra and ventral surface clothed with dense spots, patches or fasciae of white or yellowish pubescence ..... *Cisseicoraebus* Kerremans
- Elytra with patterns of blue spots and fasciae; pubescence, when present, not in dense concentrations, much less conspicuous ..... *Obenbergerula* Hoscheck
6. Lateral marginal carinae of pronotum entire, not crenulate or otherwise interrupted ..... 7
- Lateral marginal carinae of pronotum crenulate ..... *Philocoroebus* gen. n.
7. Pronotal lateral carinae, when viewed from above, not visible past premarginal carinae; pronotum more or less flattened ..... *Cisseis* Gory & Laporte

- Lateral carinae of pronotum fully visible from above; pronotal disc uneven or convex medially ..... 8
- 8. Pronotum more or less evenly convex medially; dorsal coloration apparently mimetic, nitid green with elytral bluish purple spots; elytra without any squamiform setal concentrations ..... *Anocissets* Bellamy
- Pronotum uneven, with elevated tubercles or costae; dorsal coloration apparently cryptic, somber with irregular iridescent reflections; elytra with irregular concentrations of squamiform setae ..... *Hypocisseis* Thomson

#### TAXONOMIC PART

##### Genus *Coroebus* Gory & Laporte

*Coroebus* Gory & Laporte, 1839: 1. - Baer 1886: 126; Saunders 1871: 104; Kerremans 1903: 231; Schultze 1916: 56; Fisher 1921: 405; Obenberger 1935: 817; Bellamy 1985: 425; 1990: 691. - Type-species: *Buprestis undatus* Fabricius [as designated: Descarpentries & Villiers 1967].

Remarks. - The Philippine species of *Coroebus* have been considered differently in the past. I have decided to narrow the definition in concert and comparison with the type-species and several close relatives from the Palaearctic fauna. This then serves as the starting point and foundation for the subsequent descriptions and new combinations below.

##### Key to the Philippine species of *Coroebus*

1. Dorsal surface unicolorous, appearing glabrous, setae very short and sparse, not concentrated into patches or fasciae (Mindanao) ..... *C. coelestis* Saunders
- Dorsal surface with setae concentrated into transverse fasciae or patches ..... 2
2. Dorsal surface multicolorous, at least when viewed from different angles, some colours, and at some angles, very bright ..... 3
- Dorsal surface unicolorous, ground colour quite somber ..... 5
3. Pronotum, more or less, unicolorous, green or deep blue; elytral disc bright green or bluish green, marginal areas black with strong deep blue or violet reflections; elytral with two transverse setose fasciae, one near apical 1/3 and the other just before apical margin (Leyte, Mindanao) ..... *C. spinosus* (F.)
- Pronotum, more or less, bicolorous, disc deep green and basolateral portion reddish cupreous, cupreous or bright green; elytral disc nitid black, marginal areas in basal 1/2 and entire apical 1/4 green; elytra with a two pairs of setal

patches on disc of middle 1/3 before single setose fascia at apical 1/3 (Luzon, Mindanao, Negros, Polillo, Samar) .....  
..... *C. hastanus* Deyrolle

4. Pronotum subglabrous, disc flattened; dorsal colour blue; elytra with two pairs of white setose patches and two obliquely transverse fasciae (Negros) ..... *C. albivestitus* sp. n.

- Pronotum with long, recumbent setae, disc convex; dorsal colour subnitid black; elytra with white setose patches and one wide fascia past apical 1/3 and a longitudinal band of testaceous setae extending along suture (Negros) ..... *C. bivestitus* sp. n.

***Coroebus hastanus* Gory & Laporte**

(figs. 1-4, 13, 18-19)

*Coroebus hastanus* Gory & Laporte, 1839: 10. – Baer 1886: 126; Kerremans 1903: 233; Schultze 1916: 56; Obenberger 1935: 830.

Material. – 24 examples (USNM): Luzon, Tayabas Pr., Mt. Dimatabing, IV-V.1925, McGregor, Casiguran; Los Baños, P.I., Baker; Negros, IV-1911, C.V. Piper; Cuernos Mts., Negros, Baker; Island Polillo, Baker; Island Samar, Baker; Iligan and Davao, Mindanao, Baker.

Remarks. – This apparently common and widespread species is listed in Obenberger (1935) from Himalaya, Bengale and Japan as well as the Philippines. In the USNM collections, there are specimens from Laos, China and Taiwan as well. It may be distinguished from the other Philippine species

with its distinct elytral colour pattern shown in fig. 18 and as indicated in the key. The male genitalia are illustrated in fig. 19.

***Coroebus coelestis* Saunders**  
(fig. 17)

*Coroebus coelestis* Saunders, 1874: 319. – Baer 1886: 126; Kerremans 1903: 233; Schultze 1916: 56; Obenberger 1935: 821.

Material. – Holotype, female (BMNH): Mindanao.

Remarks. – This large, subglabrous species may eventually need to be placed in a distinct genus, but this will await more detailed study of the entire complement of *Coroebus*. It is quite distinct from the other four species listed here as Philippine congeners and may be separated as in the key. The dorsal habitus is illustrated in fig. 17.

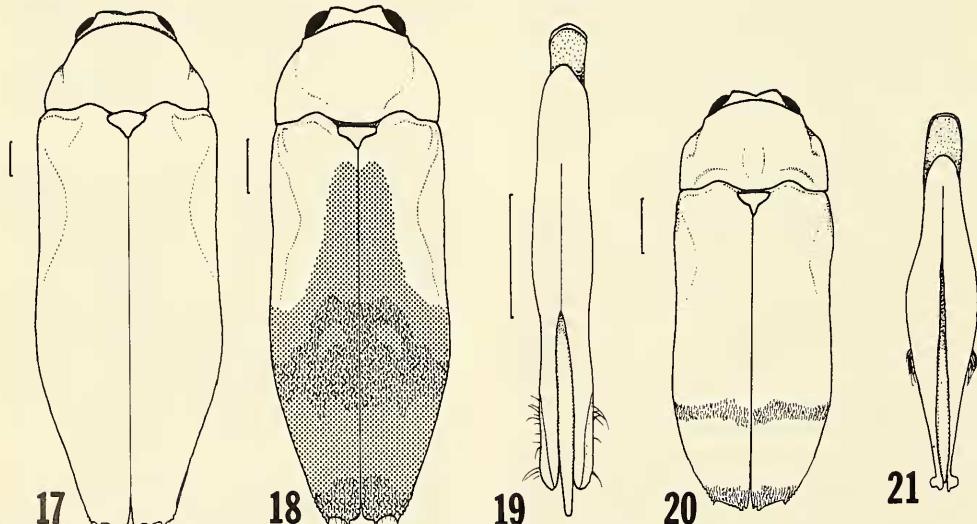
***Coroebus spinosus* (Fabricius)**  
(figs. 20-21)

*Buprestis spinosus* Fabricius, 1801: 214.

*Coroebus spinosus*; Gory & Laporte 1839: 10; Baer 1886: 126; Kerremans 1903: 233; Schultze 1916: 56; Fisher 1921: 406; Obenberger 1935: 837.

*Coroebus laportei* Saunders, 1871: 104. – Baer 1886: 126; Obenberger 1935: 837.

*Coroebus transversus* Kerremans, 1900: 79. – Kerremans 1903: 232; Schultze 1916: 56; Théry 1927: 257; Obenberger 1935: 837.



Figs. 17-21. *Coroebus* spp., dorsal habitus and dorsal aspect of male genitalia. – 17, *C. coelestis*; 18, 19, *C. hastanus*; 20, 21, *C. spinosus* (scale lines = 1 mm, equal for figs. 19 and 21).

Material. – Of *transversus*, holotype, female (BMNH): Leyte; of *spinosus*, 5 examples (USNM): Mindanao, Dapitan and Davao.

Remarks. – The type of *spinosus* was unavailable for study and that of *laportei* was not borrowed. I have accepted the synonymy of previous authors, based on determined material in the USNM collection, comparison to the plates in Gory & Laporte (1839) and study of the type of *transversus*. This beautiful little species is quite distinct from the remainder of the Philippine species and may be separated by its coloration, vestiture and very different male genitalia as shown in figs. 20 and 21 respectively.

#### *Coroebus albivestitus* sp. n. (figs. 22-24)

Type material. – Holotype, male (USNM): Philippines, Negros Or., Sibulan, Balingesay, 1981, C. K. Starr.

#### Description

Holotype, male. Size,  $14.1 \times 4.5$  mm; elongate, subcylindrical, flattened above; dorsal integument colour nitid black with blue reflection, ventral colour subnitid black; head and pronotum sparsely covered with short, stout, recurved black setae except for slightly more dense patches of testaceous setae as follows: on head one pair dorsal to antennal cavities; on either side of pronotum dorsal to marginal carinae near apicolateral angle; elytra moderately setose with setae concentrated into patches and fasciae as in fig. 6; ventral surface partially covered with moderately dense recumbent testaceous setae, especially on hypomera, lateral thoracic sternites, metacoxal plate and first two abdominal sternites.

Head: with frontovortex longitudinally depressed between large eyes; inner margins of eyes diverging dorsally; circumocular groove extends along anterior margin from near dorsal apex of eye to before ventral apex; each antennal cavity bordered dorsally with one arcuate groove; supra-antennal grooves confluent with depressed base of frontoclypeus; frontoclypeus in shape of inverted 'Y', with apical margin angularly emarginate; area beneath each eye depressed for reception of basal antennomeres in repose; gena with acute angular projection; antennae with antennomere 2 longer than 3; 3 shorter than 4; 4-10 serrate, longer than wide; 11 shorter than 10, oblong.

Pronotum: slightly greater than  $1.5 \times$  as wide as long; widest at about middle; anterior margin strongly arcuate medially; posterior margin bisinuate on either side of truncate median portion

anterior to scutellum; basolateral angles obtuse, rounded; lateral margins carinate, finely crenulate, slightly diverging from base to about middle, then roundly arcuate to anterior margin; disc flattened, laterally convex, narrowly explanate before margins; scutellum large, subcordiform, longer than wide; basal margin truncate, lateral angles rounded, apex elongate, acuminate.

Elytra: slightly wider at base than pronotal base, widest at about apical third; humeri small, moderately elevated, oblique; lateral margins nearly straight from past base to basal third, then widening slightly to apical  $1/3$  before narrowing to separately obliquely truncate apices, apices dentate as in fig. 6; pygidium slightly visible past elytra, broadly arcuate laterally, single short acuminate tooth medially.

Underside: suture between first two abdominal sternites feebly indicated laterally; premarginal groove extends along perimeter of sternite 5; femora subfusiform; tibiae flattened, subarcuate; tarsi short with claws bifid, inner teeth pointing inward. Genitalia: as in fig. 24, mounted on a point beneath specimen.

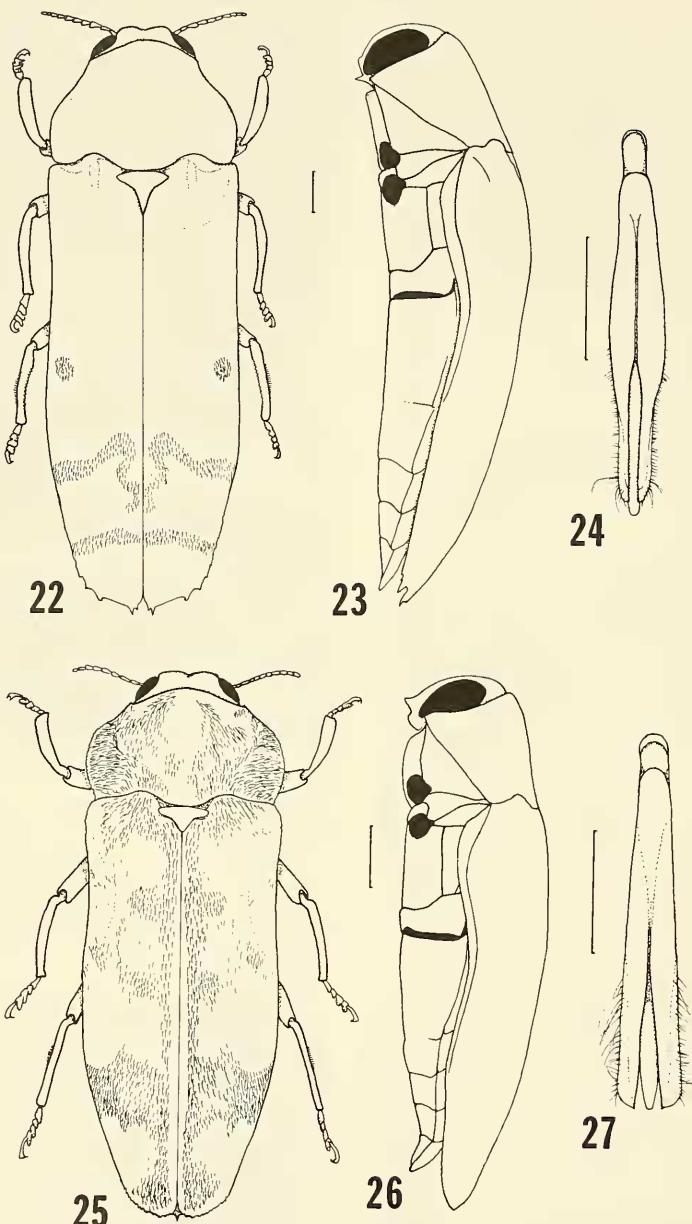
Remarks. – *Coroebus albivestitus* is named for the white setal vestiture of the elytra. This species is immediately distinguished from the remaining Philippine *Coroebus* spp. with its distinctive coloration, elytral setal pattern and male genitalia as illustrated and utilized in the key.

#### *Coroebus bivestitus* sp. n. (figs. 25-27)

Type material. – Holotype, male (BPBM 14609): P. I., Negros Or. Nr. Mt. Talinas, 1020m, 27.VII.1958 / rain forest / H. E. Milliron collector.

#### Description

Holotype male. Size,  $8.7 \times 3.2$  mm; elongate, subcylindrical, flattened above; dorsal integument colour subnitid black, with cupreous reflections lateral to pronotal gibbosity and along elytral suture, blue reflections in some lateral portions of elytra without dense setal covering; ventral colour subnitid black with slight aeneous reflections; head and pronotum moderately to densely covered with recumbent white and testaceous setae, more dense on ventral half of frontovortex and explanate portions of pronotum; elytra moderately setose with white setae concentrated into fasciae as in fig. 9 with testaceous setose longitudinal bands, which slightly expand into largest fascia past apical third; ventral surface generally covered with moderately dense recumbent off-white setae.



Figs. 22-27. *Coroebus* spp. – 22-24, *Coroebus albivestitus* sp. n.; 22, dorsal habitus; 23, left lateral aspect; 24, male genitalia, dorsal aspect; 25-27, *Coroebus bivestitus* sp. n.; 25, dorsal habitus; 26, left lateral aspect; 27, male genitalia, dorsal aspect (scale lines = 1 mm).

Head: with frontovertex longitudinally depressed between large eyes; a pair of feebly elevated small callous-like spots along eye margins near mid-point; inner margins of eyes subparallel, slightly diverging ventrally; circumocular groove extends along anterior margin from near dorsal apex of eye to before ventral apex; each antennal cavity bordered dorsally with one arcuate groove; frontoclypeus in shape of inverted 'Y', with apical margin arcuately emarginate; area beneath each eye depressed for reception of basal antennomeres in repose; gena with acute angular projection; antennae with antennomere 2 slightly longer, wider than 3; 3 and 4 subequal; 5-10 serrate, longer than wide; 11 subequal to 10, oblong.

Pronotum:  $1.7 \times$  as wide as long; widest at about middle; anterior margin moderately arcuate; posterior margin bisinuate on either side of truncate median portion anterior to scutellum; basolateral angles obtuse; lateral margins carinate, crenulate, broadly arcuate from base to apex; disc convex, lateral and basolateral areas explanate before margins; scutellum subcordiform; basal margin subtruncate, lateral angles rounded, apex elongate, acuminate.

Elytra: slightly wider at base than pronotal base, widest at about apical 1/3; humeri small, moderately elevated, oblique; lateral margins entirely finely serrate, nearly straight from past base to basal 1/3, then widening slightly to apical 1/3 before narrowing to separately rounded apices; pygidium not visible past elytra.

Underside: suture between first two abdominal sternites feebly indicated laterally; premarginal groove extends along perimeter of sternite 5; femora subfusiform; tibiae flattened, subarcuate; tarsi short with claws appendiculate.

Genitalia: as in fig. 27, mounted on point beneath specimen.

Remarks. — *Coroebus bivestitus* may be separated from its congeners with its bicolorous elytral setal pattern and the male genitalia as illustrated in figs. 25 and 27 respectively. The species is named for the bicolored elytral setae.

#### Incertae sedis

##### *Coroebus bajulus* Deyrolle

*Coroebus bajulus* Deyrolle, 1864: 122. — Baer 1886: 126; Kerremans 1903: 232; Fisher 1921: 406; Obenberger 1935: 820.

Remarks. — Saunders (1874) stated that he thought that this species would prove to be a variety of *bastanus*. Although Fisher (1921) listed this species from Negros and Obenberger (1935) also

listed Luzon, I do not believe that this species really exists within the Philippine fauna. The two specimens that Fisher recorded are preserved (USNM) within a larger series from several different Philippine localities and labelled in his hand as *C. bastanus*; these locality data are listed otherwise irregularly under that species. *C. bajulus* was described from Ceram and there are very few known distributional tracks corroborated by buprestids between this part of Indonesia and the Philippines.

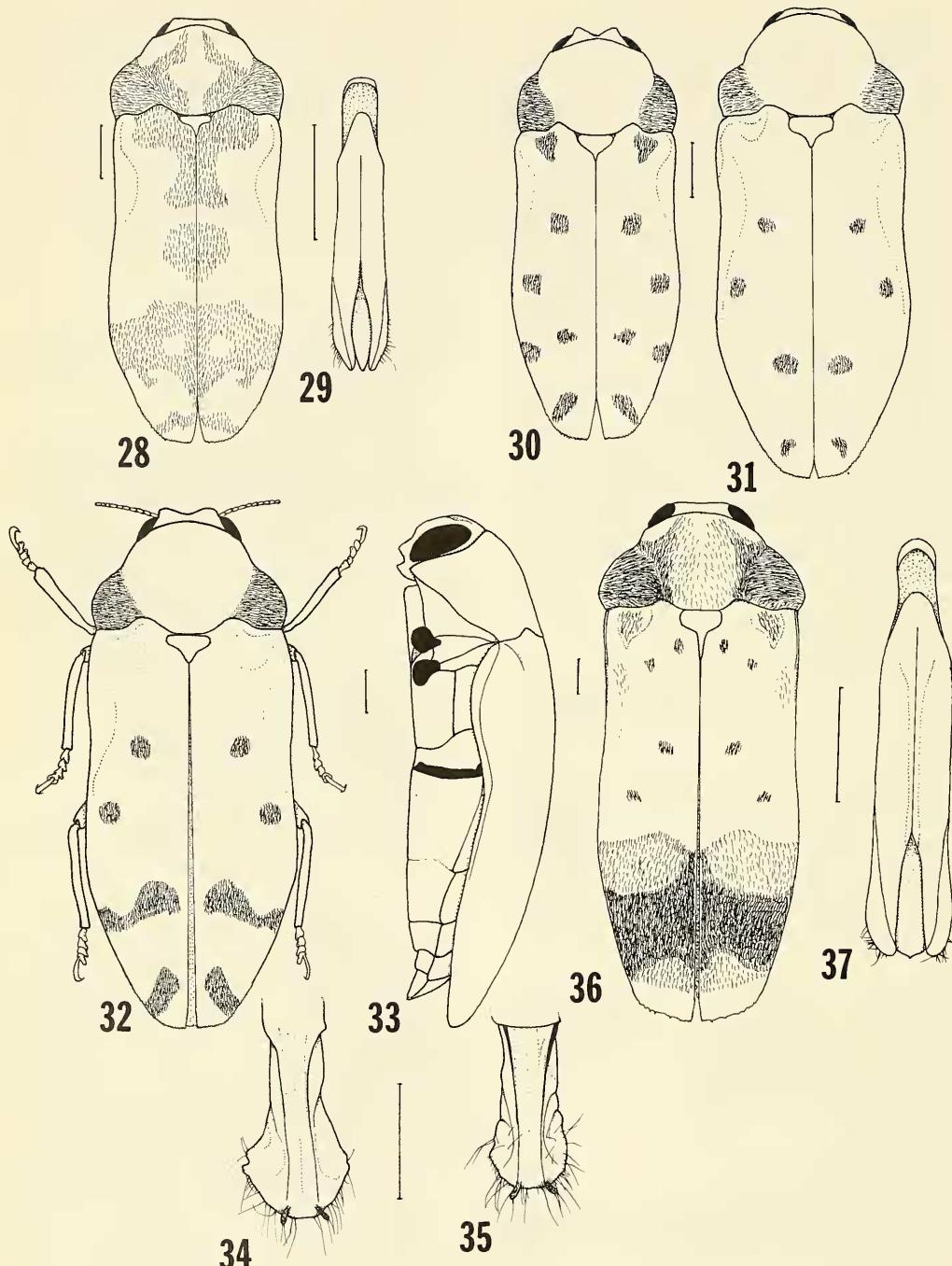
#### Genus *Cisseicoraebus* Kerremans

*Cisseicoraebus* Kerremans, 1903: 253; Schultze 1916: 56; Fisher 1921: 350; Obenberger 1935: 814; Bellamy 1985: 425; 1990: 691. — Type-species: *Coroebus grandis* Kerremans [here designated].

Remarks. — At the time the genus was described, Kerremans (1903) listed three species, *C. grandis* (Kerremans) from Samar, *C. retrolatus* (Deyrolle) from Indonesia and *C. subcornutus* (Fairmaire) from Gabon, with the latter now placed in the genus *Euchroaria* Obenberger. As Kerremans was generally not in the habit of designating generic type species, and I can find no indication that such has been done for *Cisseicoraebus*, I designate *grandis* as the type species for this taxon.

#### Key to the Philippine species of *Cisseicoraebus*

1. Dorsal surface black with setae white and distributed on elytra in small patches and broad fasciae (e.g. figs. 28, 36) ..... 2
- Dorsal surface with pronotum green or cupreous and elytra green; setae golden and distributed on elytra in patches and narrow fasciae ..... 3
2. Lateral areas of pronotum and apical 1/2 of elytra densely covered with elongate yellowish white setae; basal 1/2 of each elytron with six setal patches; elytral apices with more elongate slightly recurved denticles; membranous lobes of parameres more expanded (fig. 37) (Samar) ..... *C. grandis* (Kerremans)
- Lateral areas of pronotum and elytra with a more sparse covering of elongate white setae; both base of elytra and broad fascia from about apical 1/3 to apical 1/6 setose, elytral disc otherwise setose as in fig. 28; elytral apices serrate; membranous lobes of parameres narrow (fig. 29) (Luzon) ..... *C. pullatus* (Saunders)
3. Dorsal surface unicolorous, dark green; each elytron with four round and two elongate setal patches, one elongate patch in basal depression (Lamao, Luzon) ..... *C. piperi* (Fisher)
- Dorsal surface bicolorous, head and pronotum differing in colour from elytra; no setal patch



Figs. 28-37. *Cisseicoraebus* spp., dorsal habitus, male and female genitalia, dorsal aspect. – 28, 29, *C. pullatus*; 30, 35, *C. piperi*; 31, *C. cisseoides*; 32-34, *Cisseicoraebus bicoloratus* sp. n.; 33, left lateral aspect; 36, 37, *C. grandis* (scale lines = 1 mm).

in basal elytral depression ..... 4  
 4. Head and pronotum with cupreous reflection, especially pronotal base; each elytron with five more or less round setal patches (Mindanao) ..... *C. cisseoides* (Saunders)  
 - Head and pronotum roseocupreous; each elytron with two round setal patches on disc and two elongate, partially oblique, fasciae on apical 1/3 (Mt. Maquiling, Luzon) ..... *C. bicoloratus* sp. n.  
 ..... *C. bicoloratus* sp. n.

***Cisseicoraebus grandis* (Kerremans)**  
(figs. 5-8, 14, 36-37)

*Coroebus grandis* Kerremans 1900: 77.  
*Coroebus grandis*; Kerremans 1903: 253; Schultze 1916: 56; Fisher 1926: 242; Obenberger 1935: 814.

Material. – 2 examples (USNM): Island Samar, Baker.

Remarks. – This large, attractive species is most similar to *C. retrolatus* from Sumatra and Borneo. I have not seen an example of *retrolatus* and, thus, cannot diagnose the differences of these two taxa. Of the Philippine species, *grandis* is distinctive in its size and pattern of vestiture and may be separated as indicated in the key and as illustrated.

***Cisseicoraebus pullatus* (Saunders) comb. n.**  
(figs. 28-29)

*Coroebus pullatus* Saunders, 1874: 320. – Baer 1886: 126; Kerremans 1903: 223; Schultze 1916: 56; Obenberger 1935: 832.

Material. – Holotype, male (BMNH): Luzon.

Remarks. – This species is similar in habitus to *C. opaculus* Obenberger described from India, but I have not been able to compare them directly, so cannot comment on specific differences. At the time this species was described, Saunders (1874) stated that it was 'most like *retrolatus*, H. Deyr., of any species I know, which it should follow'. Obenberger (1935) listed *retrolatus* under *Ciseicoraebus*. Within the Philippine fauna, *pullatus* is immediately distinguished by its coloration, vestiture and male genitalia as indicated in the key and shown in figs. 28 and 29.

***Cisseicoraebus piperi* (Fisher) comb. n.**  
(figs. 30, 35)

*Coroebus piperi* Fisher, 1921: 406. – Obenberger 1935: 832.

Material. – Holotype, female (USNM 51490): Lamao, Luzon, P.I., III-VI, 1911, C. V. Piper, collector.

Remarks. – This and the following two species are apparently closely related by virtue of a very similar set of integument coloration and the setal patterns of the pronotum and elytra. With no males known for any of the three species, I have illustrated the ovipositors to distinguish *C. piperi* (fig. 35) from *C. bicoloratus* (fig. 34). These three species are separated as indicated in the key and by the specific patterns of the elytral setal patterns shown in figs. 30, 31 and 32 respectively.

***Cisseicoraebus cisseoides* (Saunders) comb. n.**  
(fig. 31)

*Coroebus cisseoides* Saunders, 1874: 319. – Baer 1886: 126; Kerremans 1903: 233; Schultze 1916: 56; Obenberger 1935: 821.

Material. – Holotype, female (BMNH): East Mindanao; 1 ex. (NSMT): Agusan d. N., Mindanao, V.1977.

Remarks. – At first glance, *C. cisseoides* appears to be a transitional form between *piperi* and *bicoloratus*, however the absence of both males and specimens other than the types makes it difficult to comment further on the relationship of these three species. It may be separated from its congeners as indicated in the key and as discussed previously.

***Cisseicoraebus bicoloratus* sp. n.**  
(figs. 32-34)

Type material. – Holotype, female (USNM): Mt. Makiling, Laguna, P.I., v.9.31 / F. C. Hadden collector; 1 paratype, female (NMPC): Mt. Maquiling, elev. 1800 m, 24.v.1949, P. Namocale.

**Description**

Holotype, female. Size, 12.2 mm × 5.0 mm; elongate, ovoid, flattened above and below; head and pronotum dark cupreous with reddish tinge; elytra bluish green; ventral surface, legs and antennae aeneous; dorsal surface moderately densely covered with medium-sized shallow punctures, elytra otherwise subrugose; ventral surface sparsely punctate medially, subimbricate laterally; dorsal surface generally with a single short silver recumbent seta from each puncture, otherwise with dense concentrations of recumbent yellow setae on frontal depression between eyes, flattened lateral areas of pronotum and in patches and fasciae on elytra as in fig. 32; ventral surface very sparsely setose medially, much more densely covered with long recumbent yellow setae on hypomera and lateral thoracic and abdominal sternites.

Head: frontovertex with lateral lobes produced between eyes, longitudinally depressed medially;

eyes large, ovoid, with ventral margin truncate dorsal to genal antennal groove, inner margins subparallel; circumocular groove only along inner margins; one small arcuate supraantennal groove with a slight dorsal gibbosity above each antennal insertion; frontoclypeus compressed between large antennal cavities, distal emargination moderately shallow, subtriangular; gena lobe with acute projection. Antennae with antennomere 2 subequal to 1, widest distally; 3 shorter than 2; 4-10 triangularly serrate; 11 oblong, curved.

Pronotum: 1.66× as wide as long, widest near middle; anterior margin arcuate; posterior margin biarcuate on either side of subtruncate prescutellar median lobe; posterolateral angles subacute; lateral margins broadly arcuate from base to apex, crenulate; disc strongly convex between strongly explanate lateral portions. Scutellum large, broadly cordiform.

Elytra: wider than pronotum posterior to humeri, widest at about apical third; lateral margins biarcuate before gradually narrowing to subtruncate apex; margin crenulate to about apical third then serrulate to apex; premarginally deeply impressed along basal third; disc transversely convex laterally, flattened medially; one basomedial depression on either elytron; epipleuron broadest basally then gradually narrowing along entire length.

Underside: prosternum ventrally produced, anterior margin subtruncate medially, arcuate laterally with emargination for antennae in repose; process slightly swollen posterior to procoxae then attenuate to rounded apex; metepisternum with inner margin strongly arcuate; metacoxal plate with posterior margin slightly dilated, evenly transverse; sutures between abdominal sternites transverse medially, arcuate laterally; sternite 1 nearly 2× length of 2; 1 + 2 longer than 3 + 4 + 5; 2-5 with groove between pleurite border and disc; 5 broadly arcuate; legs: femora narrow, subfusiform; protibiae flattened, meso- and metatibiae subcylindrical; tibiae armed with two short distal spines; tarsomeres 1-4 subequal, each slightly shorter than preceding and with slightly more expanded ventral pulvilli; 5 narrow, elongate, claws stout, bifid, inner teeth broad, shorter than outer teeth. Ovipositor: as illustrated in fig. 34, mounted on point beneath specimen.

Variation. Size, 12.1 mm × 4.8 mm. The single female paratype is virtually identical to the holotype in all aspects of coloration, vestiture and sculpture.

Remarks. - This species is named for its bicolorous dorsal integument. It comes nearest to *C. ciseoides* and may be distinguished as indicated under that species and in the key above.

### Genus *Philocoroebus* gen. nov.

Type-species: *Coroebus azureipennis* Obenberger [new designation].

Short, ovoid, subcylindrical, convex above, flattened below. Head produced, bilobed between eyes; eyes large, inner margins diverging dorsally; frontal disc entire; supraantennal transverse groove entire; antennal cavities large; frontoclypeus compressed between antennae, distal margin emarginate; gena lobate. Antennae serrate from antennomere 5. Pronotum wider than long; disc convex, somewhat gibbose; lateral portions explanate, margins carinate; with one short prelateral carina on each side. Scutellum large, triangular or cordiform.

Elytra convex, subparallel, attenuate to separately rounded or angulate apices; epipleuron separated from disc by carina, extending to well beyond middle. Thoracic sternites. Prosternum short, longitudinally convex, mentonierre entire, short, feebly produced; process with sides subparallel to rounded apex. Mesepisternum, mesepimeron elongate, oblique. Metepisternum narrow, elongate. Metepimeron not visible. Metacoxa short, broad, feebly dilated distally.

Abdominal sternites. Suture between sternites 1 and 2 feebly indicated, somewhat concave anteriorly; sutures between sternites 2, 3, 4 and 5 evenly transverse.

Legs. Femora narrowly fusiform. Tibiae elongate, with pair of distal spines; metatibia with setal comb on external edge. Tarsi short, tarsomeres 1-4 subequal, each with ventral pulvillus; 5 narrow, elongate, claws appendiculate.

Wing as in figs. 15, 16; radial sector vein extending basally about same distance as median vein; radiomedial crossvein extends from posterior angle of radial cell; some branches of anal veins poorly indicated.

Genitalia: male aedeagus short, parameres partially fused basally, some with various apical membranous modifications as shown figs. 42, 44, 46, 48, 50, 52 and 54; ovipositor of 'normal type'.

Remarks. - The generic name is a combination of the prefix from *Philippines* mated with the nominate generic epithet for this large buprestid tribe. The name was chosen to reflect the fact that this group of species is apparently restricted to various islands in the Philippine archipelago.

Fisher (1921) recognized two groups of species in his discussion and key for *Coroebus* [sic] but did nothing further to separate them. The character state of the pronotal prelateral carina is not absolute as some of the species do not exhibit the presence of this state. The loss of the prelateral

carina is felt to be a character state reversal as the other aspects of the morphology of these congeners agree in the perceived characters of importance. *Philocoroebus* can be separated from the other members of the tribe as indicated in the generic key above and the species are distinguished below.

#### Key to the species of *Philocoroebus*

1. Pronotum with prelateral carinae, one on either side (e.g. figs. 38, 39) ..... 2
- Pronotum without prelateral carinae (i.e. figs. 45, 51, 56) ..... 9
2. Body more ovoid,  $L/W \leq 2.35$  ..... 3
- Body more elongate,  $L/W \geq 2.50$  ..... 6
3. Elytra with transverse setal fasciae ..... *P. azureipennis* (Obenberger)
- Elytra without setae concentrated into transverse fasciae ..... 4
4. Dorsal surface colour black with pronotum reflecting blue-green, elytra reflecting deep blue; male genitalia with parameres subparallel and with projecting membranous lobes apically (fig. 48) (Samar) ..... *P. samarensis* sp. n.
- Dorsal surface iridescent blue or blue green; parameres strongly diverging apically, some part of each apex membranous, but without projecting lobe (e.g. fig. 42) ..... 5
5. Dorsal integument deep blue; male genitalia as in fig. 42 (Luzon) ..... *P. banahaoensis* (Obenberger)
- Dorsal integument blue-green to deep blue; male genitalia as in fig. 44 (Luzon) ..... *P. maquilingensis* sp. n.
6. Dorsal integument iridescent green with or without blue reflection ..... 7
- Dorsal integument iridescent deep blue with either green or purple reflections ..... 8
7. Elytra with transverse setal fasciae; ventral surface black with slight iridescent reflections (Luzon) ..... *P. elongatus* sp. n.
- Elytra without setae concentrated into transverse fasciae; ventral surface iridescent green (Luzon) ..... *P. meliboeiformis* (Saunders)
8. Prosternum with process more narrow in proportion to entire length (PS  $L/W = 2.50$ ) (Luzon) ..... *P. alius* sp. n.
- Prosternum broader (PS  $L/W = 2.11$ ) (Mindanao) ..... *P. adamantinus* sp. n.
9. Pronotum with lateral explanate areas covered with recumbent setae; elytra with small setal patches resembling some spp. of *Cisseis* (Luzon) ..... *P. pseudocisseis* sp. n.
- Dorsal surface without any concentrations of setae as above ..... 10
10. Dorsal surface iridescent green with blue reflections (Luzon) .... *P. cyaneoviridis* (Fisher)
- Dorsal surface colour deep iridescent purple

(Luzon) ..... *P. purpureus* sp. n.

#### *Philocoroebus azureipennis* (Obenberger) comb. n. (figs. 9-12, 15, 38-40)

*Coroebus azureus* Fisher, 1921: 405 [name preoccupied]  
*Coroebus azureipennis* Obenberger, 1935: 820 [new name]

Material. - Holotype, female (USNM 51489); Baguio, Benguet, Luzon, Baker; 8 females (3 USNM, 3 BPBM, 2 CLBC) Mt. Makiling, Laguna, Luzon, P. I., various dates IV-VI.1931 / 1932, F. C. Hadden; 1 female (USNM), Agr. College, Laguna, P. I., V.19.[19]31 / F. C. Hadden.

#### Description

The original description of Fisher (1921) is more than adequate and only the following diagnostic comments are given to allow a confident definition of this species in comparison to the many new ones described below.

Diagnosis. Holotype, female. Size,  $7.3 \times 2.9$  mm; ovoid, transversely convex above; shining blue green iridescence dorsally; black ventrally; surface generally imbricate; dorsal surface sparsely covered with recumbent grey setae, slightly more dense, regular on elytra; elytral fasciae with white setae as in fig. 38; ventral surface more densely covered with adpressed white setae. Head longitudinally depressed from vertex along entire length of frons; supraantennal grooves strongly arcuate, moderately wide; antennal cavities separated by width subequal to each repective width; distal margin of frontoclypeus emarginate, straight medially, angulate laterally. Pronotum nearly  $1.8 \times$  wide as long; with prelateral carinae. Prosternum  $2.0 \times$  as long as wide. Ovipositor as illustrated in fig. 40.

Variation ( $n = 10$ ). Size: length, 5.8-7.3; width, 2.4-2.9 mm; the dorsal coloration varies from steel blue with a slight purple reflection to a deep metallic green without any blue tinge visible.

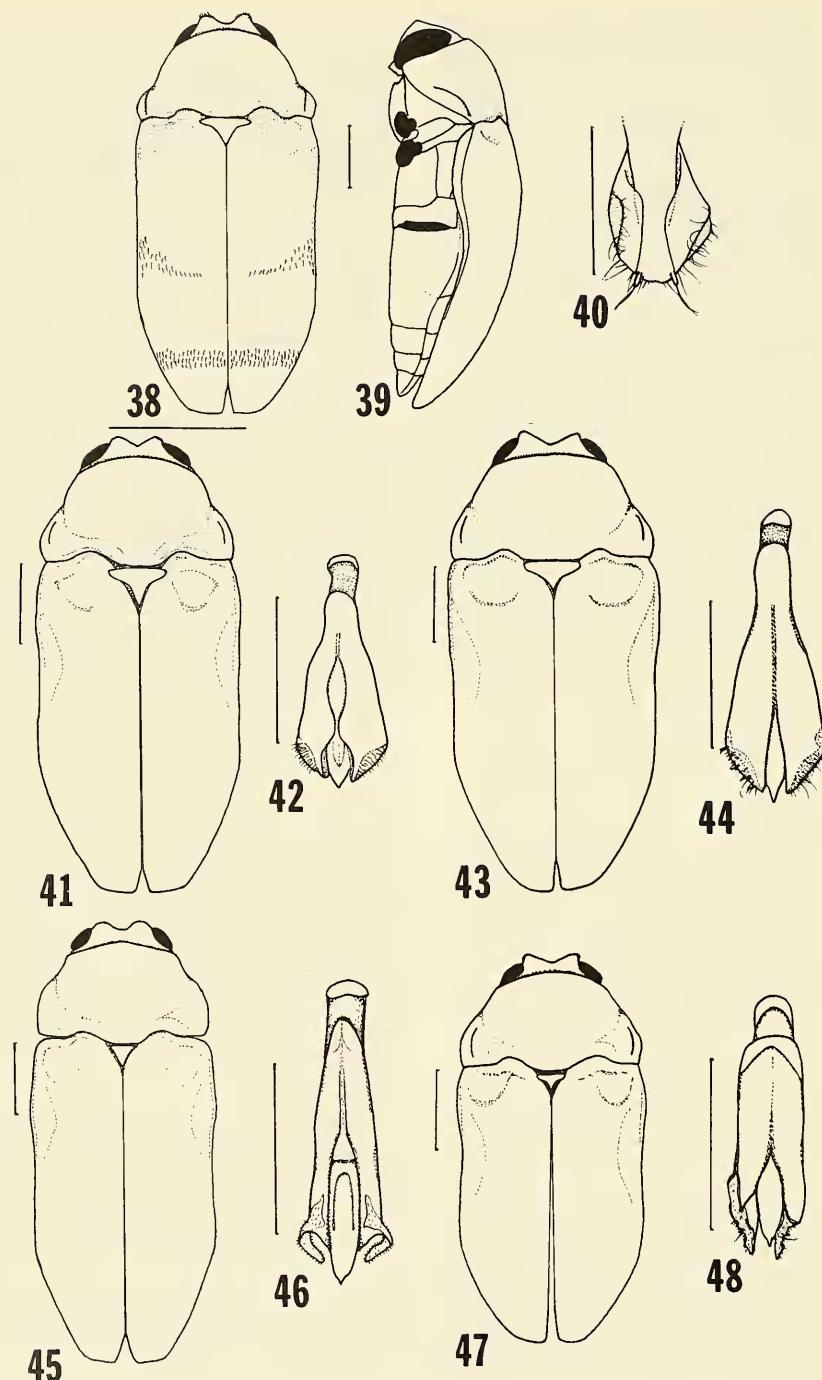
Male: unknown.

Remarks. - This species may only possibly be confused with *P. elongatus* sp. n. due to the similar dorsal coloration and vestiture, however the body proportions and more complex development of the elytral setae pattern of elongatus will immediately separate these two taxa.

#### *Philocoroebus banahaoensis* (Obenberger) comb. n. (figs. 41, 42)

*Coroebus banahaoensis* Obenberger, 1928: 338. - Obenberger 1935: 820.

Material. - Lectotype, male [new designation] (NMPC 23709); Mt. Banahao, Luzon, G. Boettcher leg.; 1 male



Figs. 38-48. *Philocoroebus* spp., dorsal and lateral habitus, male and female genitalia. - 38-40, *P. azureipennis*; 41, 42, *P. bahanaoensis*; 43, 44, *P. maquilingensis* sp. n.; 45, 46, *P. purpureus*; 47, 48, *P. samarensis* (scale lines = 1 mm).

paralectotype (NMPC 23710): same data; 1 male (USNM), Mt. Banahao, P.I., Baker.

### Description

The original description of two syntypes by Obenberger (1928) is sufficient to warrant just the following diagnosis.

**Diagnosis.** Lectotype, male. Size,  $5.5 \times 2.4$  mm; ovoid; convex above; flattened below; dorsal surface iridescent greenish blue with moderate purple tinge on elytra; entire surface imbricate; dorsal surface sparsely covered with recumbent grey setae, slightly more dense, regular on elytra; ventral surface more densely covered with adpressed white setae. Head longitudinally depressed; supraantennal grooves strongly arcuate, wide; antennal cavities separated by distance subequal to their individual widths; frontoclypeus arcuately emarginate distally. Pronotum nearly  $1.9 \times$  as wide as long, with prelateral carinae; Prosternum nearly  $2.3 \times$  as long as wide. Genitalia: as in fig. 42, mounted on point with specimen.

Variation ( $n = 3$ ). Size: length, 5.5-5.7; width, 2.4-2.9 mm; the dorsal colour varies in both the paralectotype and the only other specimen on hand by both having the purple tint lost completely and thus being mostly steel blue on the elytra.

Female: unknown.

**Remarks.** – This species is quite similar to *P. maquilingensis* sp. n. and other than the differences in the male genitalia, I would have probably left them together. They are separated as indicated in the key and mostly on the basis of the shape and proportional differences of the male genitalia. As there is overlap between these two mountains in both types series, there is undoubtedly some type of ecological allopatry involved which can explain this divergence.

### *Philocoroebus maquilingensis* sp. n. (figs. 43, 44)

Type material. – Holotype, male (USNM): Mt. Makiling, Luzon, Baker; 3 male paratypes: 1 (BPBM), same data as holotype except VI.1.[19]32 / F. C. Hadden collector; 1 (USNM), Lamao, Luzon, III-VI.(19)11 P 1 / CV Piper Collector; 1 (USNM), Mt. Banahao, P.I., Baker.

### Description

Holotype, male. Size:  $6.7 \times 2.6$  mm; elongate ovoid, convex above, flattened below; dorsal surface iridescent bluish green, ventral surface black with strong blue green reflection; head black with blue and purple reflections; pronotum and medial parts of ventrites imbricate, punctate; lateral portion of abdominal sternite 1 longitudinally rugu-

lose; elytra rugose; dorsal surface generally moderately covered with fine, short, recurved testaceous setae; ventral surface with more dense covering of more elongate, adpressed, white setae. Head longitudinally grooved from vertex along entire length of frons; clypeus broadly arcuately emarginate; supraantennal grooves strongly arcuate, relatively broad; antennal cavities separated by distance much less than their separate width. Protonum nearly  $1.9 \times$  wide as long; short, prelateral carinae feebly indicated. Elytra with lateral carina serrate; epipleuron extends to apicolateral angle. Prosternum slightly more than  $2.4 \times$  long as wide; with widely separated, feebly produced, bilobed mentoniere. Genitalia: as in fig. 44, mounted on point with specimen. Variation ( $n = 4$ ). Size: length, 5.8-6.1; width, 2.4-2.8 mm; the colour of one paratype is a much deeper blue with no trace of green.

Female: unknown.

**Remarks.** – *Philocoroebus maquilingensis* comes nearest to *P. banahaoensis* and is distinguished from that species by the differences in coloration, vestiture and the male genitalia. These two species are also close to the next new species, *P. samarensis*. These species can be separated as indicated in the preceding key.

### *Philocoroebus samarensis* sp. n. (figs. 47, 48)

Type material. – Holotype, male (USNM): Island Samar, Baker.

### Description

Holotype, male. Size:  $4.8 \times 2.2$  mm; elongate ovoid, convex above, flattened below; dorsal and ventral surfaces shining black with faint blue and purple reflections; pronotum and medial parts of ventrites imbricate, punctate; lateral portion of abdominal sternite 1 longitudinally rugulose; elytra rugose; dorsal surface generally moderately covered with fine, short, recurved testaceous setae; ventral surface with moderate covering of short, fine, adpressed, white setae. Head longitudinally grooved from vertex along entire length of frons; clypeus convexly emarginate; supraantennal grooves arcuate, narrow; antennal cavities separated by a distance equal to their separate width. Pronotum  $1.9 \times$  as wide as long; with prelateral carinae. Elytra with lateral carinae finely serrate. Prosternum  $1.8 \times$  as long as wide. Genitalia: as in fig. 48, mounted on point with specimen.

Female: unknown.

Remarks. – This species is unique in that it is both the smallest species and specimen of *Philocoeribus*, is entirely black and is the only specimen known from the island of Samar, hence the name. The aedeagus is very different from the other two species of the perceived species-group, *P. banabaoensis* and *P. maquilingensis* and will serve to immediately distinguish *P. samarensis* from its congeners.

*Philocoeribus meliboeiformis* (Saunders)  
comb. n. (figs. 49, 50)

*Coroebus meliboeiformis* Saunders, 1874: 321. – Baer 1886: 126; Kerremans 1903: 233; Schultze 1916: 56; Fisher 1921: 406; Obenberger 1935: 831.

Material. – Holotype, male (BMNH): C. Luzon.

### Description

Holotype, male. Size: 7.3 mm × 3.0 mm; elongate ovoid; convex above, flattened below; shining golden green above and below, except for apical half of elytra which is black; surface generally imbricate, with elytral disc rugose; moderately covered with short, recumbent white setae. Pronotum 1.6× as wide as long; pronotum with prelateral carinae. Prosternum 2.2× as long as wide. Genitalia: as in fig. 50, mounted on card with specimen.

Female: unknown.

Remarks. – This is the only species of *Philocoeribus* which is brightly coloured on the ventral surface. The holotype is somewhat damaged as it was originally prepared with a very oversized pin; it is now mounted on a card along with the genitalia and the right middle leg.

*Philocoeribus cyaneoviridis* (Fisher) comb. n.  
(figs. 51, 52)

*Coroebus cyaneoviridis* Fisher, 1922: 14. – Obenberger 1935: 822.

Material. – Holotype, male (USNM 24670): Baguio, Luzon, Philippine Islands.

### Description

Fisher's (1922) original description is quite informative, so the following diagnosis is provided solely for comparison.

Diagnosis. Holotype, male. Size: 6.9 × 2.7 mm; elongate ovoid, convex above, flattened below; dorsal surface iridescent green with some lateral and apical blue reflections, epipleuron black with pur-

plish blue reflections, ventral surface black; pronotum and medial parts of ventrites imbricate, punctate; lateral portion of abdominal sternite 1 longitudinally rugulose; elytra rugose; dorsal surface generally moderately covered with fine, short, recurved testaceous setae; ventral surface with moderate covering of short, fine, adpressed, white setae. Head longitudinally grooved from vertex along entire length of frons; clypeus convexly emarginate; supraantennal grooves arcuate, narrow; antennal cavities separated by a distance equal to their separate width. Pronotum nearly 1.9× as wide as long, without prelateral carinae. Elytra with lateral carinae finely serrulate on basal 2/3, serrate to apicolateral angle, then finely dentate; apices separately angulately truncate. Prosternum 2.2× as long as wide. Genitalia: as shown in fig. 52, mounted on point with specimen.

Female: unknown.

Remarks. – This species and the following are very close in many character states and differ from the remaining congeners in that they are two of three which lack the prelateral carinae. The general morphology is very similar with only the coloration of the dorsal integument significantly different. The male genitalia are very similar yet differ in the details of the projecting membranous lobes. These two species may be separated with their differing coloration.

*Philocoeribus purpureus* sp. n.  
(figs. 45, 46)

Type material. – Holotype, male (USNM): Mt. Makiling, Laguna, P.I., V.6.[19]31 / F. C. Hadden collector.

### Description

Holotype, male. Size: 6.2 × 2.4 mm; elongate ovoid, convex above, flattened below; dorsal surface iridescent purple with some lateral blue reflections, epipleuron and ventral surface black; head black with blue green reflections; pronotum and medial parts of ventrites imbricate, punctate; lateral portion of abdominal sternite 1 longitudinally rugulose; elytra rugose; dorsal surface generally moderately covered with fine, short, recurved testaceous setae; ventral surface with moderate covering of short, fine, adpressed, white setae. Head longitudinally grooved from vertex along entire length of frons; clypeus convexly emarginate; supraantennal grooves arcuate, narrow; antennal cavities separated by a distance equal to their separate width. Pronotum slightly more than 1.8× as wide as long, without prelateral carinae. Elytra with lateral carinae denticulate; apices separately

angulately truncate. Prosternum 2.0× as long as wide. Genitalia: as in fig. 46, mounted on point beneath specimen.

Female: unknown.

**Remarks.** – The specific epithet is obviously coined for the distinctive dorsal coloration. *P. purpureus* was discussed above in comparison to *P. cyanoviridis*.

***Philocoroebus alius* sp. n.**  
(figs. 16, 53-54)

Type material. – Holotype, male (USNM): Majayjay, Laguna, Mar. 6, (19)28, Luzon, P.I. / Colln R. C. McGregor.

**Description**

Holotype, male. Size: 7.8 × 3.1 mm; elongate ovoid, convex above, flattened below; dorsal surface iridescent blue green with some laterobasal golden reflections on the pronotum, ventral surface black; head black with blue green reflections on vertex and roseocupreus reflections on frons; pronotum and medial parts of ventrites imbricate, punctate; lateral portion of abdominal sternite 1 longitudinally rugulose; elytra rugose; dorsal surface generally moderately covered with fine, short, recurved testaceous setae; ventral surface with moderate covering of short, fine, adpressed, white setae. Head longitudinally grooved from vertex along entire length of frons; clypeus convexly emarginate; supraantennal grooves arcuate, narrow; antennal cavities separated by a distance slightly greater than their separate width. Pronotum nearly 1.7× as wide as long; with prelateral carinae. Elytra with marginal carinae finely serrulate to apicolateral angle, then finely dentate along rounded apical margin. Prosternum 2.5× as long as wide. Genitalia: as in fig. 54, mounted on point with specimen. Wing: as in fig. 16.

Female: unknown.

**Remarks.** – *Philocoroebus alius* comes nearest to *P. adamantinus* n. sp. and may be separated as indicated in the key above. These species differ in the colour of the dorsal integument, vestiture, the amount of projection of the frontovertex between the eyes, shape of frontoclypeal emargination and in the two type localities, each from one of the two largest and widely separated Philippine islands. The specific name comes from the Latin, meaning 'another'.

***Philocoroebus adamantinus* sp. n.**  
(fig. 55)

Type material. – Holotype, female (USNM): Butuan, Mindanao, Baker.

**Description**

Holotype, female. Size: 6.8 × 2.7 mm; elongate ovoid, convex above, flattened below; dorsal surface nitid black with blue reflections on pronotum and elytra and purple reflections on humeri, epipleuron and ventral surface black; head black with blue and golden green reflections; pronotum and medial parts of ventrites imbricate, punctate; lateral portion of abdominal sternite 1 longitudinally rugulose; elytra rugose; dorsal surface generally moderately covered with fine, short, recurved testaceous setae; ventral surface with moderate covering of short, fine, adpressed, white setae. Head with broad longitudinal depression from vertex along entire length of frons; clypeus emarginate; supraantennal grooves evenly transverse medially, arcuate laterally, narrow; antennal cavities separated by a distance slightly greater than their individual width. Pronotum slightly more than 1.7× as wide as long; with prelateral carinae. Elytra with marginal carinae finely serrulate along basal 2/3, slightly more so on attenuate apical third, but less so on narrow, separately rounded apices. Prosternum 2.3× as long as wide.

Male: unknown.

**Remarks.** – The specific epithet is from the Latin, meaning "steel blue". This species comes nearest *P. alius* as discussed above.

***Philocoroebus elongatus* sp. n.**  
(figs. 58, 59)

Type material. – Holotype, female (USNM): Majayjay, Mar. 30, [19]29, Lagun, Luzon, P. I. / Colln R. C. McGregor; 3 female paratypes (BPBM): 1, P. I. Luzon, Camarines Sur, Mt. Isarug, Pilí, 800m, 27.IV.1965 / H. M. Torrevillas collector; 1, Ifugao Prov., Liwo, 8 km E Jayoyao, 1000-1300m, 30.V.1967 / L. M. Torrevillas collector; 1, same except Jacmal Bunhian, 24 km E Mayoyao, 800-1000m, 27-29.IV.1967 / H. M. Torrevillas, light trap.

Other material. – 3 specimens (NSMT): C. Luzon, Mountain Prov., 3.VII.1989.

**Description**

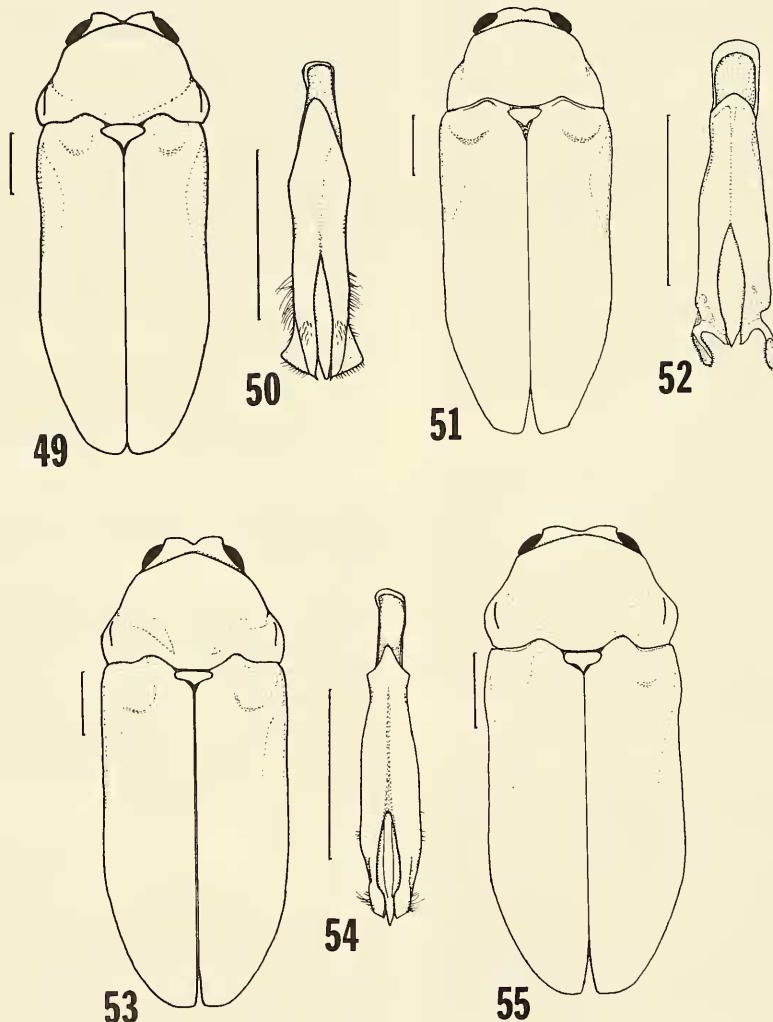
Holotype, female. Size: 7.7 × 3.0 mm; elongate ovoid, convex above, flattened below; dorsal surface iridescent blue green, ventral surface black; pronotum and medial parts of ventrites imbricate, punctate; lateral portion of abdominal sternite 1 longitudinally rugulose; elytra rugose; dorsal surface generally moderately covered with elongate, recumbent grey setae; elytra with elongate, recumbent white setae concentrated into patches and

fasciae as in fig. 58; ventral surface with moderate covering of short, fine, adpressed, white setae. Head bilobed, strongly produced anteriorly between eyes, longitudinally grooved from vertex along entire length of frons; clypeus convexly emarginate; supraantennal grooves strongly arcuate, wide; antennal cavities separated by a distance subequal to their separate width. Pronotum nearly  $1.8\times$  as wide as long; with prelateral carinae. Elytra with marginal carinae finely serrulate to apicolateral angle, then finely denticulate along rounded apical margin. Prosternum  $2.3\times$  as long as wide. Variation ( $n=4$ ). In size,  $7.7\text{--}8.3 \times 2.9\text{--}3.4$  mm; the three

paratypes are more strongly green than blue green in the dorsal coloration.

Male: unknown.

Remarks. — *Philocoroebus elongatus* is named for being the most elongate member of the new genus. Due to the pubescent patches and fasciae, it may be confused with both *P. azureipennis* and *P. pseudocisseis* n. sp. but may be separated from either of these as indicated in the key. *P. azureipennis* is much shorter in proportion and differs in the distribution of the elytral setal patches, while *P. pseudocisseis* lacks the prelateral pronotal carinae



Figs. 49-55, *Philocoroebus* spp., dorsal habitus and male genitalia. — 49, 50, *P. meliboeiformis*; 51, 52, *P. cyaneoviridis*; 53, 54, *P. alius* sp. n.; 55, *P. adamantinus* sp. n. (scale lines = 1 mm).

and has the elytral setae concentrated only in patches, lacking the apical fascia.

The three specimens from Mountain Prov., C. Luzon are an apparent variant of this species. They differ by being consistently larger and the colour is more of a brassy green. Without males present, I prefer to neither make these three paratypes nor to consider them as another new taxon.

### *Philocoroebus pseudocisseis* sp. n.

(figs. 56, 57)

Type material. — Holotype, female (USNM): Mt. Makiling, Laguna, P. I. IV.21.[19]31 / F. C. Hadden collector; 3 female paratypes: 1 (USNM), same data as holotype; 1 (USNM), same data except V.6.[19]31; 1 (BPBM): same data except IV.19.[19]31 / elevation 3000 ft. / flowers of malaklak.

### Description

Holotype, female. Size: 6.9 × 2.8 mm; elongate ovoid, convex above, flattened below; dorsal surface iridescent golden green, epipleuron and ventral surface black; pronotum and medial parts of ventrites imbricate, punctate; lateral portion of abdominal sternite 1 longitudinally rugulose; elytra rugose; dorsal surface generally moderately covered with fine, short, recurved testaceous setae; elytra with elongate, recumbent, stout, white setae concentrated into small patches distributed on disc as in fig. 56; ventral surface with moderate covering of short, fine, adpressed, white setae. Head longitudinally grooved from vertex along entire length of frons; clypeus convexly emarginate; supraantennal grooves strongly separately arcuate, wide; antennal cavities separated by a distance slightly greater than their individual width. Pronotum 1.8× as wide as long; lateral area explanate with moderately dense covering of transversely recumbent yellowish white setae; without prelateral carinae. Elytra with marginal carinae finely serrulate on attenuate apical third, more finely dentate on apicolateral angle, then entire along separately subtruncate apices. Prosternum slightly more than 2.2× as long as wide. Genitalia: (not illustrated) mounted on a point beneath specimen. Variation ( $n = 4$ ). In size, 6.9–7.9 × 2.8–3.0 mm; the coloration is fairly constant except for some blue-green elytral reflections on the largest paratype.

Male: unknown.

Remarks. — This species is named for its similar appearance to numerous species of the Australian genus *Cisseis* but can be separated from that taxon as in the generic key. As discussed above under *P. elongatus*, *P. pseudocisseis* comes near both that species and *P. azureipennis* is general

appearance but differs considerably. These three species may be separated as discussed previously and as in the species key above.

### Genus *Cisseis* Gory & Laporte

*Cisseis* Gory & Laporte, 1839: 1. — Kerremans 1893: 117; 1903: 227; Obenberger 1935: 842; Bellamy 1985: 425. — Type-species: apparently not yet designated (see discussion below).

Remarks. — In his revision of the Australian species of *Cisseis*, Carter (1923) briefly discussed the original generic description and the six species assigned by Gory & Laporte (1839). There was no designation in that work of a type-species and I am unaware of any subsequent designation; this should be left to the eventual, and long overdue, new revision of this largest generic component of the Australian Coroebini.

### *Cisseis aquilonia* sp. n.

(figs. 60-62)

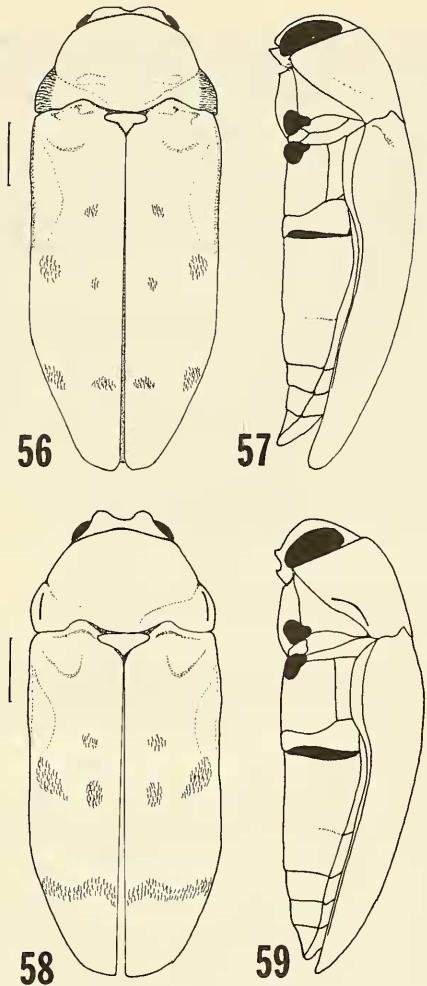
Type material. — Holotype, male (BPBM 14607): Philippine Is., Sur, Iriga Camarines, VII.2-14-1932, M. Caneda.

### Description

Holotype, male. Size, 5.5 mm × 2.2 mm; elongate, ovoid, transversely subconvex above and below; both surfaces reddish cupreous, head with a golden reflection; head and underside moderately shallowly punctate; pronotum imbricate; elytra rugose discally, imbricate laterally; surface with very sparse cover of short, white, adpressed setae; elytra with setae slightly more stout and more dense and with subsquamiform setae in one fascia and one patch on each elytron as in fig. 60.

Head: slightly produced between eyes on either side of longitudinal depression of frons; eyes large, inner margins feebly diverging dorsally; ventral arch of eye bordered by moderately deep groove; frontoclypeus with vague transversely sinuate supraantennal groove; disc constricted between large antennal cavities; distal margin with trapezoidal emargination, oblique laterally, truncate medially; gena grooved beneath eye for antenna in repose, projecting lobe acute. Antennae: antennomere 1 gibbose; 2 slightly shorter than 1, narrower; 3 shorter than 2, slightly wider distally; 4–9 subrectangularly serrate, length subequal to width; 10 and 11 missing.

Pronotum: nearly 2× as wide as long, widest in posterior half; anterior margin biarcuate on either side on medial convexity; posterior margin bisinuate on either side of median truncate lobe, a pre-



Figs. 56-59. *Philocoroebus* spp., dorsal and lateral habitus. - 56, 57, *P. pseudociseis* sp. n.; 58, 59, *P. elongatus* sp. n. (scale lines = 1 mm).

marginal carina extends between two arcuations medially; posterolateral angles obtuse, rounded; lateral margins only visible at base when viewed directly from above, carinate, subparallel from posterior margin to beyond midpoint, then arcuate to anterior margin; disc flattened, slightly depressed in posterolateral thirds; premarginal carinae nearly entire, not reaching either anterior or posterior margin. Scutellum: cordiform.

Elytra: slightly wider than pronotum, widest at margin opposite humeri; lateral margins subparallel from base to about apical third, then gradually attenuate to separately rounded apices; margins appear serrulate due to lateral imbrications; epi-

pleuron very short, only feebly separated from disc; disc feebly transversely convex; each elytron depressed at base between humerus and scutellum and declivous past humerus posterolaterally; distal portion of pygidium slightly visible beyond elytral apices.

Underside: prosternum with bilobed mentoniæ, process with sides subparallel between procoxae, apex broadly rounded; metacoxal plate short, margins subparallel, posterior margin sinuate, feebly dilated; abdominal sternites with sutures between 2, 3, 4 and 5 transverse medially, arcuate laterally; length of 1 less than  $2 + 3$ ; 1 + 2 slightly longer than  $3 + 4 + 5$ ; 2-5 with premarginal groove; 5 with marginal band strongly explanate, a moderately dense fringe of long white recumbent setae on disc before premarginal groove; marginal attenuate laterally, then arcuate to slight median emargination. Leg: femora feebly swollen, sides subparallel; protibia feebly arcuate, slightly flattened; metatibia nearly straight, subcylindrical; protarsi with tarsomeres 1-4 each progressively shorter, with ventral pulvilli progressively longer, more expanded; metatarsi with antennomere 1 elongate slightly longer than  $2 + 3$ ; 5 narrow, with stout simple claws.

Genitalia: as in fig. 62, mounted on point with specimen. The holotype is damaged with the following parts missing: left antennae, last two antennomeres; right antennae, last three antennomeres; left fore leg and middle leg missing most of tibiae and complete tarsi; right middle leg missing entire tibia and tarsus; left hind leg missing entire tarsus.

**Remarks.** - The only revision of *Cisseis* was by Carter (1923) and was only for the Australian species. To even discuss this new Philippine species in context of the Australian species and Carter's revision without considering the remaining complement of *Cisseis* seems rather moot and such discussion would obviously be rather misapplied. However, for comparative purposes, the following discussion may aid the reader in his understanding of this new Philippine species and its, at least superficial, relationship to the Australian congeners. *C. aquilonia* belongs to the group Carter categorized as 'Sect. II, Group B', those with the elytra vaguely impressed with white pubescence, more or less marbled, but not in circular spots. The key Carter provides for this group is partly based on colour without a clear outcome for *aquilonia*. A reasonable comparative match is with *C. roseocuprea* Hope, which compares well in size and colouration, but differs by not having the flattened white elytral setae, but has the lateral pronotal carinae visible from above and the general dorsal sculpture is both denser and the elytra more rugose. The few

non-Australian *Cisseis* spp. listed by Obenberger (1935) will need to be validated as to their correct generic placement in contrast to *Anocisseis* Bellamy (1990), now known from the Philippines and Borneo.

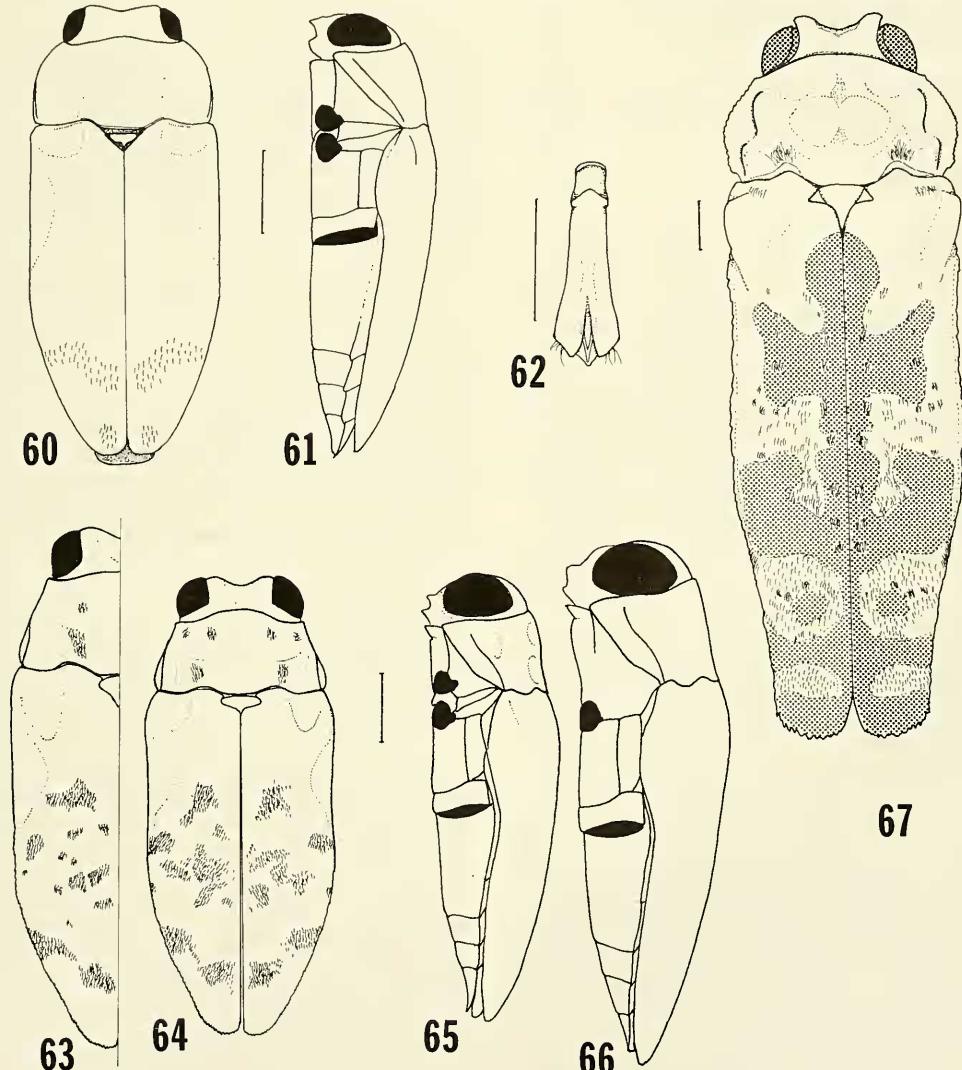
### Genus *Anocisseis* Bellamy

*Anocisseis* Bellamy, 1990: 693. – Type-species: *Anocisseis samarensis* Bellamy [from original designation].

Remarks. – This genus and the type-species were fully described in the first part of this series (Bellamy 1990). I have included them here only in context to the generic key and refer the reader to the previous paper for more detail.

### Genus *Hypocisseis* Thomson

*Hypocisseis* Thomson, 1879: 49. – Kerremans 1893: 118; 1903: 256; Obenberger 1935: 860; Bellamy 1985: 425;



Figs. 60-67. *Cisseis*, *Hypocisseis* and *Vanroonia* spp. – 60-62, *C. aquilonia* sp. n.; 60, dorsal habitus; 61, left lateral aspect; 62, male genitalia, dorsal aspect; 63, 66, *H. auriceps*; 63, left dorsal habitus; 66, left lateral aspect; 64, 65, *H. philippinensis* sp. n.; 64, dorsal habitus; 65, left lateral aspect; 66, left lateral aspect; 67, *V. luzonica* sp. n., dorsal habitus (scale lines = 1 mm).

1988: 417. – Type-species: *Hypocisseis laticornis* Thomson [from original monotypy].  
*Cisseoides* Kerremans, 1893: 118. – Kerremans 1903: 254; Obenberger 1935: 857; Bellamy 1985: 425. – Type-species: *Cisseoides murina* Kerremans [from original monotypy].

Remarks. – These taxa were discussed recently by Bellamy (1988). *Hypocisseis* would benefit from a thorough revision and this new species is described to encourage such a project.

#### *Hypocisseis philippinensis* sp. n. (figs. 64, 65)

Type material. – Holotype, female (BPBM 14608): P. I., Mindanao, Zamboange del Sur, Lemesahan, 600m, 7.IX.1958 / light trap, H. E. Milliron.

#### Description

Holotype, female. Size, 6.6 mm × 2.7 mm; elongate, ovoid, transversely subconvex above and below; nitid black with cupreous reflections on imbrications of vertex and pronotum, elytra with aeneous reflection; head with most of frontal area bright roseocupreous; head, pronotum and ventral surface imbricate, elytra imbricate rugose; surface generally sparsely setose with setae short, white, recumbant, those on elytra subsquamiform.

Head: large eyes slightly produced on either side of frontal depression; inner margins of eyes subparallel; frontoclypeus with a transverse groove dorsad; disc constricted between large antennal cavities; distal margin with half-trapezoidal emargination; gena with area along ventral margin of eye excavated, ventral to this transversely grooved for antennae in repose and projecting lobe acute; antennae with antennomere 2 shorter, more slender than 1; 3 shorter than 2; 4-6 triangularly serrate; 7-10 rectangularly serrate; 11 oblong, curved distally.

Pronotum: width 2× length, widest near base; anterior margin broadly arcuate; posterior margin bisinuate on either side of median prescutellar lobe; basolateral angles obtuse; lateral margins broadly arcuate in posterior half then more straight and converging toward anterior margin; single carina on either side extending from posterior margin to about anterior third; disc uneven, with slight depressions in pairs which are filled in by concentrations of setae as in fig. 64; scutellum broadly cordiform, posterior angle acute.

Elytra: slightly wider at humeri than pronotum; humeri moderately elevated; lateral margins roundly acute from base to opposite humeri, the subparallel to about apical third before gradually narrowing to separately rounded apices; margins carinate serrate from near midpoint; epipleuron a

small, elongate triangle; disc with slight basal depression on either side; setal pattern as in fig. 64; pygidium not visible past apices.

Underside: prosternum with bilobed mentoniere; process with sides subparallel between procoxae, apex triangularly attenuate; metacoxal plate short, moderately dilated; abdominal sternites 1 + 2 slightly longer than 3 + 4 + 5; sutures between 2, 3, 4 & 5 evenly transverse; sternite 5 with pre-marginal groove concentric to margin, with a sparse row of elongate testaceous setae projecting toward posterior, apex slightly emarginate.

Legs: femora feebly fusiform, ventral surface slightly excavated for tibiae in repose; protibiae slightly arcuate at base, feebly flattened, unarmed at apex; meso- and metatibiae straight, subcylindrical; tarsomeres 1-4 each progressively slightly longer, with ventral pulvilli more developed distally; 5 elongate, narrow, claws bifid with inner teeth shorter. This specimen is missing the entire left hind leg.

Remarks. – The species listed under *Cisseoides* by Obenberger (1935) are either from Australia or New Guinea. *H. philippinensis* represents the first species known from north of the Equator, an obvious significant range extension for the genus. I have illustrated the new species in comparison to *H. auriceps* (Deyrolle) (figs. 63, 66) from New Guinea. These two species differ in their proportions, coloration, vestiture, shape and configuration of the prelateral pronotal carinae.

#### *Vanroonia* Obenberger

*Vanroonia* Obenberger, 1923: 29. – Obenberger 1935: 814; 1958: 503; Bellamy 1985: 425; 1988: 416. – Type-species: *Vanroonia coraebooides* Obenberger [from original monotypy].

Remarks. – This genus and its identity in comparison to *Amorphosoma* Laporte was discussed by Bellamy (1988, 1990). The relictual nature of the species of *Vanroonia* is indicated by the spread of their distribution (i.e. Africa, India, S.E. Asia, Philippines). An eventual revision of *Vanroonia* would be helpful as an adjunct to that of Obenberger (1958). Two species are now known from the Philippines as discussed below.

#### *Vanroonia marmorea* (Deyrolle)

*Amorphosoma marmoreum* Deyrolle, 1864: 127. – Obenberger 1935: 793; Fisher 1921: 408; 1926: 241.  
*Vanroonia marmorea*; Bellamy 1990: 692.

Remarks. – This species, as discussed by Fisher

(1921, 1926) and Bellamy (1990), is well defined and will be distinguished from its new congener below.

*Vanroonia luzonica* sp. n.  
(fig. 67)

Type material. – Holotype, female (USNM): Quezon Park, Tayabas, P. I., Alt. 1000 ft., VII-1-[19]32 / F. C. Hadden Collector.

### Description

Holotype, female. Size, length 15.0 mm, width (of pronotum) 4.6 mm; elongate, subcylindrical, flattened below; shining black, with some areas of venter, especially epipleuron, reflecting blue purple; head, pronotum and underside generally imbricate, elytra rugose; surface generally sparsely covered by short recumbent white setae from imbricate punctures, setae longer and/or more dense in some areas of pronotum and elytra as shown in fig. 67; elytra with short white setae in patterns and stout, semi-erect dark brown setae interspersed on disc (fig. 67, stippled area).

Head with frontovertex depressed medially, produced into lateral lobes which project beyond ocular margin; eyes large, subreniform, inner margins feebly sinuate, diverging dorsally; ocular groove extends from slightly beyond dorsal apex along inner margin to before ventral apex, quite wide dorsally; supraantennal groove transverse, biarcuate; frontoclypeus compressed between antennal cavities, distal margin excavated, straight medially, arcuate laterally; gena with large acute projecting tooth ventral to each eye. Antenna with antennomere 1 stout, geniculate basally; 2 shorter, narrower than 1; 3 shorter than 2; 4-10 serrate, 4 with width subequal to length, 5-10 each with width to length ratio increasing; 11 oblong.

Pronotum nearly 2X wider than long, widest at middle; anterior margin arcuate; posterior margin strongly bisinuate on either side of median lobe; basolateral angles obtuse; lateral margins broadly arcuate, crenulate, explanate; disc uneven, subtuberculate, with biarcuate prelateral carina on either side. Scutellum large, wider than long, anterior margin straight, with angulate lateral lobes, distal lobe acuminate; disc finely rugose.

Elytral subequal in width to pronotum, widest at humeri; humeral lobes feebly projecting; one moderately deep depression at base between humerus and scutellum on either side; lateral margins carinate, widely serrate, subparallel from humeri to apical third, then narrowing gradually to broad, separately rounded, dentate apices; disc flattened medially, convexly rounded laterally; epipleuron

widest just beyond base, subparallel to opposite metacoxa, then gradually narrowing to apicolateral elytral angle.

Underside. Prosternum shortened, mentonniere angularly bilobed, process slightly compressed between procoxae, attenuately rounded apically; metacoxae short, dilated apically; abdominal sternites 1+2 longer than 3+4+5; 5 with preapical groove around entire length, apex straight.

Legs. Femora narrowly fusiform; tibiae somewhat flattened, with a quadrate cross-section, with two short stout spines on inner margin distally; protibiae arcuate basally; tarsi short, tarsomeres 1-4 subequal, each progressively shorter and with progressively longer ventral pulvilli; 5 narrow, elongate, equal in length to 1-4 together, claws simple.

Genitalia. Ovipositor mounted on card beneath specimen; of 'coroebine type'.

Remarks. – The name is chosen for Luzon, the large northern island of the Philippine archipelago and location of the type locality. This new species can be distinguished from *V. marmorea* by its larger size, black coloration and elytral vestiture. *V. marmorea* usually has the two projecting lobes on the frontovertex clothed with dense erect stout testaceous setae. In addition, the head, pronotum and basal two-thirds of the elytra are a dull aeneous colour and most of the thoracic sternites are densely covered with adpressed white setae.

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